

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A valve system for an internal combustion engine, comprising:

an intake-side rocker shaft;

an exhaust-side rocker shaft;

intake-side rocker arms having ends thereof connected to intake valves and supported on said intake-side rocker shaft such that said intake-side rocker arms rock, the intake-side rocker arms being driven by intake cams, the intake side rocker arms including,

a first rocker arm having an end thereof connected to the intake valve and supported on said intake-side rocker shaft such that said first rocker arm rocks, the first rocker arm being driven by a first low-lift cam, and

a second rocker arm having an end thereof connectable to said first rocker arm and supported on said intake-side rocker shaft, the second rocker arm being adapted to engage with the first rocker arm at an angle substantially perpendicular to a center longitudinal axis of the intake valve, such that said second rocker arm rocks, the second rocker arm being driven by a high-lift cam causing a larger valve lift than the first low-lift cam;

exhaust-side rocker arms having ends thereof connected to exhaust valves and supported on said exhaust-side rocker shaft such that said exhaust-side rocker arms rock, the exhaust-side rocker arms being driven by an exhaust cam; and

a switching mechanism switching operating characteristics of the intake valves,

wherein the intake-side rocker shaft is provided with the switching mechanism and has a larger diameter than the exhaust-side rocker shaft.

2. (Previously presented) A valve system for an internal combustion engine according to claim 1, wherein said intake-side rocker arms further include,

a connection switching mechanism that selectively connects or disconnects said second rocker arm to or from said first rocker arm.

3. (Previously presented) A valve system for an internal combustion engine according to claim 1, wherein,

said intake valves include a first intake valve and a second intake valve, and

said intake-side rocker arms further include,

a third rocker arm having an end thereof connected to said second intake valve and supported on said intake-side rocker shaft such that said third rocker arm rocks, the third rocker arm being driven by a second low-lift cam that causes a smaller valve lift than the first low-lift cam, and

a connection switching mechanism that selectively connects or disconnects said second rocker arm to or from said first rocker arm and said third rocker arm.

4. (Previously presented) A valve system for an internal combustion engine according to any of claims 1 to 3, wherein said intake-side rocker arms include center-pivot type rocker arms with middle parts thereof pivoted by said intake side rocker shaft.

5. (Original) A valve system for an internal combustion engine according to claim 4, wherein said intake-side rocker arms and said exhaust-side rocker arms are driven by a single cam shaft disposed between said intake-side rocker shaft and said exhaust-side rocker shaft.

6. (Previously presented) A valve system for an internal combustion engine according to claim 3, wherein the first rocker arm has a first roller follower provided with a double-ring type sliding roller that makes contact with the first low-lift cam.

7. (Previously presented) A valve system for an internal combustion engine according to claim 3, wherein the first rocker arm has a first roller follower provided with a double-ring type sliding roller that makes contact with the first low-lift cam, and the third rocker arm has second roller follower provided with a needle bearing that makes contact with the second low-lift cam.

8. (Previously presented) A valve system for an internal combustion engine, comprising:

an intake-side rocker shaft having a first oil channel extending in a longitudinal direction thereof;

an exhaust-side rocker shaft having a second oil channel extending in a longitudinal direction thereof;

intake-side rocker arms having ends thereof connected to intake valves and supported on said intake-side rocker shaft such that said intake-side rocker arms rock, the intake-side rocker arms being driven by intake cams, the intake side rocker arms including,

a first rocker arm having an end thereof connected to the intake valve and supported on said intake-side rocker shaft such that said first rocker arm rocks, the first rocker arm being driven by a first low-lift cam, and

a second rocker arm having an end thereof connectable to said first rocker arm and supported on said intake-side rocker shaft, the second rocker arm being adapted to engage with the first rocker arm at an angle substantially perpendicular to a center longitudinal axis of the intake valve, such that said second rocker arm rocks, the second rocker arm being driven by a high-lift cam causing a larger valve lift than the first low-lift cam;

exhaust-side rocker arms having ends thereof connected to exhaust valves and supported on said exhaust-side rocker shaft such that said exhaust-side rocker arms rock, the exhaust-side rocker arms being driven by an exhaust cam; and

a switching mechanism switching operating characteristics of the intake valves, wherein the intake-side rocker shaft is provided with the switching mechanism and has a larger diameter than the exhaust-side rocker shaft.

9. (Previously presented) A valve system for an internal combustion engine, comprising:

an intake-side rocker shaft;

an exhaust-side rocker shaft;

intake-side rocker arms having ends thereof connected to intake valves and supported on said intake-side rocker shaft, such that said intake-side rocker arms rock, the intake-side rocker arms being driven by an intake cam;

exhaust-side rocker arms having ends thereof connected to exhaust valves and supported on said exhaust-side rocker shaft, such that said exhaust-side rocker arms rock, the exhaust-side rocker arms being driven by an exhaust cam, the exhaust-side rocker arms including,

a first rocker arm having an end thereof connected to the exhaust valve and supported on said exhaust-side rocker shaft such that said first rocker arm rocks, and

a second rocker arm having an end thereof connectable to said first rocker arm and supported on said exhaust-side rocker shaft, the second rocker arm being adapted to engage with the first rocker arm at an angle substantially perpendicular to a center longitudinal axis of the exhaust valve, such that said second rocker arm rocks; and

a switching mechanism switching operating characteristics of the exhaust valves,

wherein the exhaust-side rocker shaft is provided with the switching mechanism and has a larger diameter than the intake-side rocker shaft.

10. (New) A valve system for an internal combustion engine according to claim 1, wherein,

the first rocker arm is provided with an opening,

the second rocker arm is provided with a projection that protrudes from the second rocker arm, and

the projection enters the opening in the direction substantially perpendicular to the center longitudinal axis of the intake valve.

11. (New) A valve system for an internal combustion engine according to claim 10, wherein, the opening is selectively closed by a closing unit to prevent the projection from entering the opening.

12. (New) A valve system for an internal combustion engine according to claim 11, wherein, the closing unit is a piston having a notch portion and a cylindrical portion, and as spring accommodated inside the opening, such that the piston selectively moves between a first position that allows the projection to enter the notch portion and a second position that prevents the projection from entering the opening by the cylindrical portion.